

REMARKS

The Official Action mailed March 17, 2006, has been received and its contents carefully noted. This response is filed within three months of the mailing date of the Official Action and therefore is believed to be timely without extension of time. Filed concurrently herewith is a *Request for Continued Examination*. Accordingly, the Applicant respectfully submits that this response is being timely filed.

The Applicant notes with appreciation the consideration of the Information Disclosure Statements filed on September 22, 2003; October 16, 2003; March 11, 2004; July 21, 2005; and January 6, 2006.

A further Information Disclosure Statement was filed on February 24, 2006 (received by OIPE February 27, 2006), a copy of which appears in the Image File Wrapper, and the Applicant respectfully requests that the Examiner provide an initialed copy of the Form PTO-1449 evidencing consideration of this Information Disclosure Statement.

A further Information Disclosure Statement is submitted herewith and consideration of this Information Disclosure Statement is respectfully requested.

Claims 1-54 were pending in the present application prior to the above amendment. Claims 1, 3, 5, 7, 9, 11-37, 39, 41, 44 and 47-54 have been amended to better recite the features of the present invention. The features of dependent claims 2, 4, 6, 8, 10, 12, 38, 40, 43 and 46 have been incorporated into their respective independent claims; therefore, these claims have been canceled. Accordingly, claims 1, 3, 5, 7, 9, 11, 13-37, 39, 41, 42, 44, 45 and 47-54 are now pending in the present application, of which claims 1, 3, 5, 7, 9, 11, 13, 16, 19, 22, 25, 28, 31, 34, 37, 39, 41 and 44 are independent. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

The Official Action rejects claims 1-4 as obvious based on the combination of U.S. Patent No. 6,393,042 to Tanaka and European Patent Application No. 1 063 049 to Okamoto. The Official Action rejects claims 5-54 as obvious based on the combination

of Tanaka '042, Okamoto and U.S. Patent No. 6,437,313 to Yamazaki. The Applicant respectfully submits that a *prima facie* case of obviousness cannot be maintained against the independent claims of the present application, as amended.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims, as amended. Independent claims 1, 3, 5, 7, 9, 11, 13, 16, 19, 22, 25, 28, 31, 34, 37, 39, 41 and 44 recite a cylindrical lens for converging a laser light in a width direction; a light guide (or light pipe) for homogenizing an energy distribution of a line-shape of the laser light (or linear beam spot) along a width direction; where the light guide (or light pipe) comprises two reflective surfaces facing to each other.

Specifically, claims 1, 3, 5, 7, 9, 11, 13, 16, 19, 22, 37, 39, 41 and 44 have been amended to recite a cylindrical lens for converging a laser light in a width direction and

already recite a light guide (or light pipe) for homogenizing an energy distribution of a line-shape of the laser light along a width direction. Claims 25, 28, 31 and 34 already recite a cylindrical lens to shape a laser beam so as to form a linear beam spot of a laser light on an irradiated surface and have been amended to clarify that the homogenized energy distribution takes place along a width direction. That is, the amended claims require that the cylindrical lens acts to converge a laser light in a width direction.

These features are supported in the present specification. For example, the present specification teaches at least a cylindrical lens array (1103a, 1103b or 1104) for homogenizing an energy distribution of a laser light along a length direction of a line-shape on an irradiated surface, a (first) cylindrical lens (1105) for converging a laser light in a width direction, a light guide (1106) for homogenizing an energy distribution of the laser light along the width direction of a line-shape, and at least one second cylindrical lens (1107a or 1107b) for condensing the laser light output from the light guide (pipe) along the width direction of the line-shape (see, e.g., Figures 2A and 2B). The Applicant notes that there is a distinct but important difference between “a width direction” and “a length direction” and that “a length direction” may also be referred to as “a longitudinal direction.”

Also, claims 1, 3, 5, 7, 9, 11, 13, 19, 25, 31, 37, 39, 41 and 44 have been amended to incorporate the features of claims 2, 4, 6, 8, 10, 12, 38, 40, 43 and 46, as appropriate. Specifically, these claims have been amended to recite that a light guide (or light pipe) comprises two reflective surfaces facing to each other. Claims 16, 22, 28 and 34 already recite these features.

For the reasons provided below, Tanaka '042, Okamoto and Yamazaki, either alone or in combination, do not teach or suggest the above-referenced features of the present invention.

Regarding claims 1-4, the Official Action concedes that Tanaka '042 does not teach the claimed light guide or pipe having two reflective surfaces facing to each other

(page 2, Paper No. 20060316). The Official Action relies on Okamoto to allegedly teach two reflective surfaces facing to each other and asserts that it would have been obvious to combine Tanaka '042 and Okamoto (Id.). Regarding claims 5-54, the Official Action concedes that Tanaka '042 and Okamoto do not teach the claimed cylindrical lens (page 3, Id.). The Official Action relies on Yamazaki to allegedly teach a cylindrical lens and asserts that it would have been obvious to combine Tanaka '042, Okamoto and Yamazaki (Id.).

However, even if sufficient motivation were identified to suggest the combination of Tanaka '042, the reflective surfaces of Okamoto and the cylindrical lens of Yamazaki, the combination of Tanaka '042, Okamoto and Yamazaki does not teach or suggest a cylindrical lens for converging a laser light in a width direction; a light guide (or light pipe) for homogenizing an energy distribution of a line-shape of the laser light (or linear beam spot) along a width direction; where the light guide (or light pipe) comprises two reflective surfaces facing to each other.

Specifically, the present claims are directed, for example, to a cylindrical lens for converging a laser light in a width direction and a light guide comprising two reflective surfaces facing to each other for homogenizing an energy distribution of the laser light along the width direction of a line-shape. On the other hand, Tanaka '042 appears to teach homogenizing an intensity of a laser light by a cylindrical lens group and the like. Tanaka '042 does not teach or suggest using a light guide comprising two reflective surfaces facing to each other for homogenizing an energy distribution of the laser light.

Okamoto does not cure the deficiencies in Tanaka '042. Although Okamoto appears to teach a light guide 30 for homogenizing an energy distribution of a laser light along a longitudinal direction (see abstract, paragraphs [0031], [0033] or [0041]), Okamoto does not teach or suggest that light guide 30 could or should be used for homogenizing an energy distribution of a laser light along a width direction. Specifically, Figure 1D of Okamoto appears to show a rectangular beam shape where a cross sectional view of the energy distribution of the width direction XC is a Gaussian profile

([0031], [0033], XC in Figure 1D). However, Okamoto does not teach or suggest that the energy distribution of the width direction XC should be homogenized. Therefore, even if one were motivated to combine Tanaka '042 and Okamoto, the resulting energy distribution would not be homogenized along a width direction.

In the "Response to Arguments" section, the Official Action acknowledges the "argument concerning the beam homogenizer." However, the Official Action does not explain how the alleged combination of Tanaka '042 and Okamoto teaches or suggests that an energy distribution of a width direction should be homogenized. Rather, the Official Action states that Tanaka '042 "merely teaches a beam homogenizer for a linearly shaped laser beam" (page 3, Paper No. 20060316). However, Tanaka '042 merely teaches "a beam homogenizer which can unify the energy distribution of a linear laser beam in a longitudinal direction" (abstract). Tanaka '042 does not teach or suggest homogenizing an energy distribution of a line-shape of the laser light (or linear beam spot) along a width direction.

The Official Action also asserts that the Applicant has not claimed "as to what is smooth or shaped" (page 3, Paper No. 20060316). However, as noted in detail above, the present claims clearly recite homogenizing an energy distribution of a line-shape of the laser light (or linear beam spot) along a width direction.

Yamazaki does not cure the deficiencies in Tanaka '042 and Okamoto. Yamazaki is relied upon to allegedly teach a cylindrical lens. However, Tanaka '042, Okamoto and Yamazaki, either alone or in combination, do not teach or suggest a cylindrical lens for converging a laser light in a width direction; a light guide (or light pipe) for homogenizing an energy distribution of a line-shape of the laser light (or linear beam spot) along a width direction; where the light guide (or light pipe) comprises two reflective surfaces facing to each other.


Therefore, Tanaka '042, Okamoto and Yamazaki, either alone or in combination, do not teach or suggest a cylindrical lens for converging a laser light in a width direction; a light guide (or light pipe) for homogenizing an energy distribution of a line-shape of the

laser light (or linear beam spot) along a width direction; where the light guide (or light pipe) comprises two reflective surfaces facing to each other.

Since Tanaka '042, Okamoto and Yamazaki do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



Eric J. Robinson
Reg. No. 38,285

Robinson Intellectual Property Law Office, P.C.
PMB 955
21010 Southbank Street
Potomac Falls, Virginia 20165
(571) 434-6789